25 MAR 1980

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MEMORANDUM FOR: Deputy Chief, Real Estate & Construction Division, OL

STATINTL FROM: [redacted]
Chief, Headquarters Engineering Branch, RECD/OL

SUBJECT: Use of Computer Room Heat to Warm the Domestic Water

REFERENCE: Memo ODP-0-127, 30 Jan 80, subj as above

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28 MAR

1. The heat given off by the various computer and communications systems is presently removed from those systems by air handlers served by chilled water which is produced in the Powerplant about a thousand feet west of the Headquarters Building. Essentually the computer heat is transferred to the air in the computer room which in turn is transferred to the chilled water system, raising the chilled water from approximately 45°F to about 55°F. The chilled water is then pumped to the Powerplant to a chiller where the heat is transferred to an evaporative cooling tower for a discharge to the atmosphere. In this entire cycle, the only "warm" medium is the water circulated from the chiller to the evaporative cooling tower at the Powerplant. And this water only reaches a temperature range of 85°F to 90°F.

2. The domestic hot water in the Headquarters Building is generated by taking part of the main water supply to the building and heating it using steam heat exchangers. The heat exchangers are located in mechanical equipment areas with each exchanger servicing a particular part of the building.

3. Under this design arrangement the heat removed from the computer rooms does not become concentrated in any amount that would be considered "warm" until it reaches the Powerplant and at that point it is too far away to be useable to warm part of the main water supply.

OL 0 1424

SUBJECT: Use of Computer Room Heat to Warm the Domestic Water

4. Two more factors should also be discussed. First, the only consideration I am aware of that would alter the present boiler operation plan of continuous service is the preliminary examination of a project to install small "summer" boilers to serve the Headquarters cafeteria and Printing and Photography Building and to install electric hot water heaters for scattered photo processors, medical services, and similar requirements. The goal of this project would be to supply the small minimum hot water requirements while allowing the large boilers in the Powerplant to be secured. This would be seasonal for possibly to period of July through August. No energy would be used to heat general domestic water under this plan during the July - August period.

5. Second, during the summer the domestic water temperature tends to rise naturally into the low to middle 70's which is not hot but is possibly acceptable for rest room room purposes.

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6. I hope the above information will help Messers [redacted] to understand our present system and encourage them to continue to look for ways to save energy.

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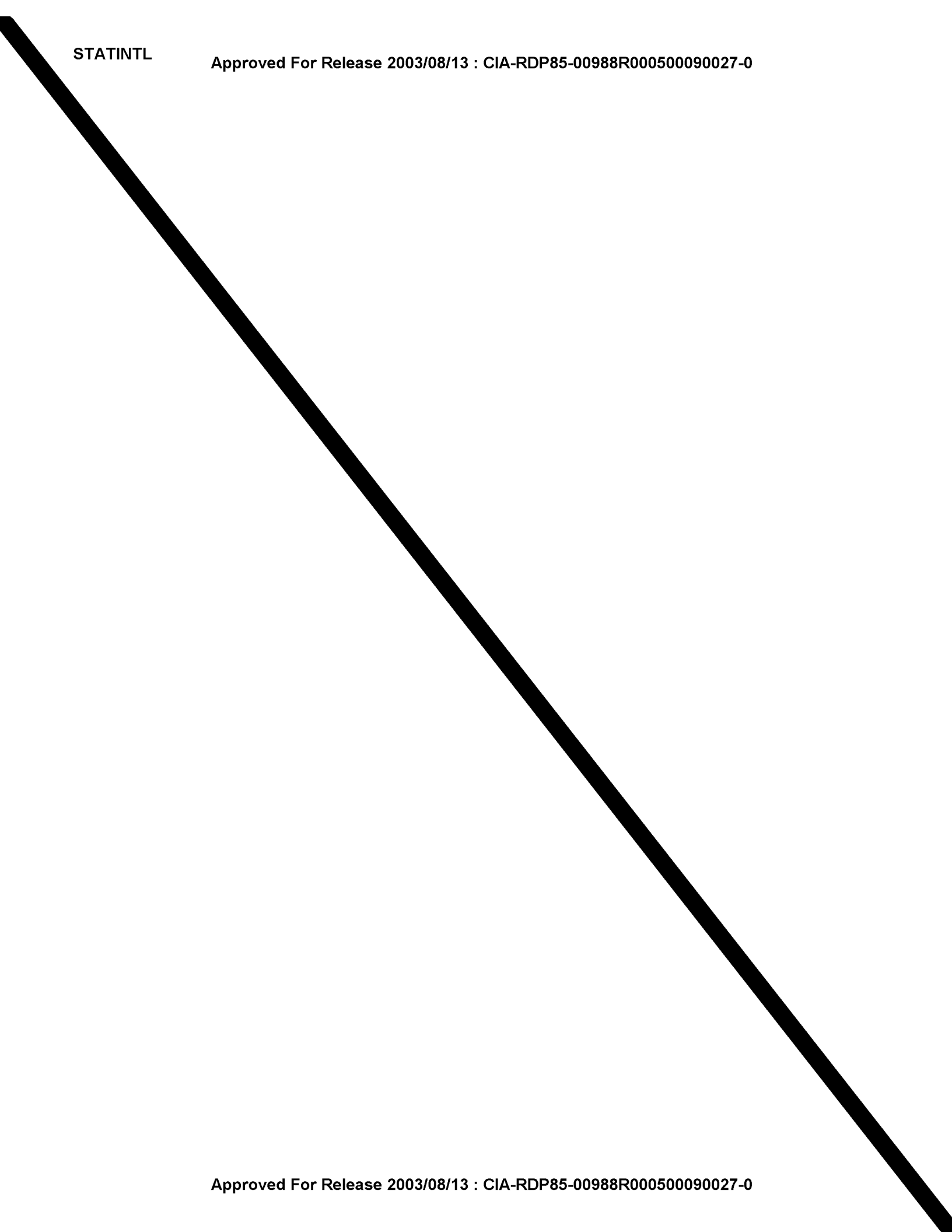

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29 JAN 1980

MEMORANDUM FOR: Chief, Real Estate and Construction Division, OL
Deputy Chief, Real Estate and Construction Division, OL

STATINTL FROM: [redacted]
Chief, Plans and Programs Staff, OL

SUBJECT: Energy Conservation

1. Enclosed are the minutes of the Energy meeting of 16 January 1980. As you may note, the meeting went smoothly and quickly, thanks in great part to your cooperation in providing P&PS with the necessary data, insight, and general information.

2. The next step, per paragraph #8 and 20 of the minutes, is to establish a system to manage, control, and communicate our energy program. To that end, would RECD prepare a presentation for the next energy committee meeting? The presentation would involve the following:

(a) Review the GSA Energy conservation study for accuracy and completeness.

(b) Include Agency items, i.e., employee suggestions, closing of the DCI garage, capture the heat from computers, etc.

(c) Present GSA's intentions to accomplish the recommendations of their study.

(d) Identify resource consumption/timetables/ milestones and budgetary data for items along with RECD recommendations.

3. The intention of the above is to provide OL with an identifiable, realistic and logical program that best meets our Agency and nations' energy challenges consistent

OL 0 0427

SUBJECT: Energy Conservation

with limited Agency resources, the realities of the GSA, and the legal requirements, guidelines, rules and regulations established by the Department of Energy (DOE).

4. Also, per paragraph 10, could you provide P&PS with a cost estimate for the dry system, identify alternatives, and provide technical energy saving recommendations?

5. A date for the next meeting has not been established, but will be keyed to RECD's estimated time to prepare the presentation. Our goal is to have a meeting during the first part of March 1980.

6. C/P&PS is available at your convenience to discuss and assist in meeting these requirements.

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STATINTL OL/P&PS (28 Jan 80)